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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,595	04/13/2001	Raymond W. Borden	H0001266	4262

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EXAMINER	
LAM, THANH	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/834,595	Applicant(s) Borden et al.
	Examiner Thanh Lam	Art Unit 2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *elect. 7/15/2002 and IDS 8/13/2002* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-67* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-67* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *5&8*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Barahia.

Regarding claim1, Barahia (see figs. 1-7) discloses a multi-pole high speed generator, comprising: an exciter including a plurality of exciter armature windings (20,30) wound thereon, and one or more rectifier module assemblies each coupled to receive an AC signal generated in one of the plurality of exciter armature windings, each rectifier module comprising: a substantially flat base (9) including a plurality of conductive circuit runs (37-39) on a surface thereof, the base being dimensioned to mount within the exciter; a first diode circuit (14), including an anode and a cathode, having the anode electrically coupled to at least a first of said plurality conductive circuit runs; a second diode circuit (12), including, an anode and a cathode, having its cathode electrically coupled to at least a second of said plurality of conductive circuit runs; and a conductive element electrically coupling together the cathode of said first diode circuit and the anode of said second diode circuit.

Regarding claim 2, Barahia discloses a resistive element (28) electrically coupled between said first and second conductive circuit runs.

Regarding claim 3, Barahia discloses said resistive element comprises a thin-film resistor.

Regarding claim 4, Barahia discloses an AC input terminal electrically coupled to at least a third of said plurality of conductive circuit runs and to said conductive element.

Regarding claim 5, Barahia discloses said AC input terminal is configured to receive a connector for electrically coupling the rectifier module assembly to one of the plurality of exciter armature windings.

Regarding claim 6, Barahia discloses first and second DC output terminals electrically coupled to said first and said second conductive circuit runs, respectively.

Regarding claim 7, Barahia discloses said first and second DC output terminals are each configured to electrically couple the rectifier module assembly to a field winding in the multi-pole high speed generator.

Regarding claim 8, Barahia discloses said first and second diode circuits each comprise a plurality of individual diodes electrically connected in parallel with one another.

Regarding claim 9, Barahia discloses the plurality of individual diodes comprises five diodes electrically connected in parallel with one another.

Regarding claim 10, Barahia discloses said first and second diode circuits are coupled to said first and second conductive circuit runs, respectively by a brazing process.

Regarding claim 11, Barahia discloses said conductive element is coupled to said first and second diodes by a brazing process (method of making).

Regarding claim 12 , Barahia discloses a non-conductive substrate interposed between said substantially flat base and said plurality of conductive circuit runs.

Regarding claim 13, Barahia discloses said non-conductive substrate comprises ceramic.

Regarding claim 14, Barahia discloses said substantially flat base comprises a metallic material.

Regarding claim 15, Barahia discloses said plurality of conductive circuit runs each comprise copper.

Regarding claim 16, Barahia discloses said first and second diode circuits each comprise glass encapsulated diodes.

Regarding claim 17, Barahia discloses said base is dimensioned to mount axially within said exciter.

Regarding claim 18, Barahia discloses a rectifier module assembly for rectifying one phase of a multi phase AC signal generated in a plurality of exciter armature windings wound on an exciter of a multi-pole high speed generator, comprising: a substantially flat base including a plurality of conductive circuit runs on a surface thereof, the base being dimensioned to mount within the exciter; a first diode circuit, including an anode and a cathode, having the anode electrically coupled to at least a first of said plurality conductive circuit runs, a second diode circuit, including an anode and a cathode, having its cathode electrically coupled to at least a

second of said plurality of conductive circuit runs; and a conductive element electrically coupling together the cathode of said first diode circuit and the anode of said second diode circuit.

Regarding claim 19, Barahia discloses a resistive element electrically coupled between said first and second conductive circuit runs.

Regarding claim 20, Barahia discloses said resistive element comprises a thin-film resistor.

Regarding claim 21, Barahia discloses an AC input terminal electrically coupled to at least a third of said plurality of conductive circuit runs and to said conductive element.

Regarding claim 22, Barahia discloses said AC input terminal is configured to receive a connector for electrically coupling the rectifier module assembly to one of the plurality of exciter armature windings.

Regarding claim 23, Barahia discloses first and second DC output terminals electrically coupled to said first and said second conductive circuit runs, respectively.

Regarding claim 24, Barahia discloses said first and second DC output terminals are each configured to electrically couple the rectifier module assembly to a field winding in the multi-pole high speed generator.

Regarding claim 25, Barahia discloses said first and second diode circuits each comprise a plurality of individual diodes electrically connected in parallel with one another.

Regarding claim 26, Barahia discloses the plurality of individual diodes comprises five diodes electrically connected in parallel with one another.

Regarding claim 27, Barahia discloses said first and second diode circuits are coupled to said first and second conductive circuit runs, respectively, by a brazing process.

Regarding claim 28, Barahia discloses said conductive element is coupled to said first and second diodes by a brazing process.

Regarding claim 29, Barahia discloses a non-conductive substrate interposed between said substantially flat base and said plurality of conductive circuit runs.

Regarding claim 30, Barahia discloses said nonconductive substrate comprises ceramic.

Regarding claim 31, Barahia discloses said substantially flat base comprises a metallic material.

Regarding claim 32, Barahia discloses said plurality of conductive circuit runs each comprise copper.

Regarding claim 33, Barahia discloses said first and second diode circuits each comprise glass encapsulated diodes.

Regarding claim 34, Barahia discloses said base is dimensioned to mount axially within the exciter.

Regarding claim 35, Barahia discloses a rectifier module assembly for rectifying one phase of a multi-phase AC signal generated in a plurality of exciter armature windings of a multi-pole high speed generator, comprising: a substantially flat base including a plurality of conductive circuit runs formed on a surface thereof, a first diode circuit, including an anode and a cathode, having the anode electrically coupled to at least a first of said plurality conductive

circuit runs; a second diode circuit, including an anode and a cathode, having the cathode electrically coupled to at least a second of said plurality of conductive circuit runs; a resistive element electrically coupled between said first and said second conductive circuit runs; and a conductive element electrically coupling together the cathode of said first diode circuit and the anode of said second diode circuit.

Regarding claim 36, Barahia discloses said resistive element comprises a thin-film resistor.

Regarding claim 37, Barahia discloses an AC input terminal electrically coupled to at least a third of said plurality of conductive circuit runs and to said conductive element.

Regarding claim 38, Barahia discloses said AC input terminal is configured to receive a connector for electrically coupling the rectifier module assembly to one of the plurality of exciter armature windings.

Regarding claim 39, Barahia discloses first and second DC output terminals electrically coupled to said first and said second conductive circuit runs, respectively.

Regarding claim 40, Barahia discloses said first and second DC output terminals are each configured to electrically couple the rectifier module assembly to a field winding in the multi-pole high speed generator.

Regarding claim 41, Barahia discloses said first and second diode circuits each comprise a plurality of individual diodes electrically connected in parallel with one another.

Regarding claim 42, Barahia discloses the plurality of individual diodes comprises five diodes electrically connected in parallel with one another.

Regarding claim 43, Barahia discloses said first and second diode circuits are coupled to said first and second conductive circuit runs, respectively, by a brazing process.

Regarding claim 44, Barahia discloses said conductive element is coupled to said first and second diodes by a brazing process.

Regarding claim 45, Barahia discloses comprising: a non-conductive substrate interposed between said substantially flat base and said plurality of conductive circuit runs.

Regarding claim 46, Barahia discloses said non conductive substrate comprises ceramic.

Regarding claim 47, Barahia discloses said substantially flat base comprises a metallic material.

Regarding claim 48, Barahia discloses said plurality of circuit runs each comprise copper.

Regarding claim 49, Barahia discloses said first and second diode circuits comprise glass encapsulated diodes.

Regarding claim 4, Barahia discloses a rectifier module assembly for mounting within a hub of an exciter of a multi-pole high speed generator, comprising: a substantially flat base including at least a first, a second, and a third conductive circuit run on a surface thereof, a first DC output terminal electrically coupled to at least said first conductive circuit run; a second DC output terminal electrically coupled to at least said second conductive circuit run, an AC input terminal electrically coupled to at least said third conductive circuit run; a first plurality of

parallel-connected diodes, each including an anode and a cathode., and each having its anode electrically coupled to at least said first conductive circuit run; a second plurality of parallel-connected diodes, each including an anode and a cathode, and each having its cathode electrically coupled to at least said second conductive circuit run; a thin-film resistive element elcctrically coupled between said first and said second conductive circuit runs; and a conductive element electrically coupling together the cathodes of said first plurality of parallel-connected diodes, the anodes of said second plurality of parallel -connected diodes, and said AC input terminal.

Regarding claim 51, Barahia discloses said pluralitv of first and second parallel connected diodes each comprise five individual diodes.

Regarding claim 52, Barahia discloses a non-conductive substrate interposed between said substantially flat base and said first, second, and third conductive circuit runs.

Regarding claim 53, Barahia discloses said non conductive substrate comprises ceramic.

Regarding claim 54, Barahia discloses said AC input terminal is configured to receive a connector for coupling the rectifier module assembly to a high speed generator exciter armature winding.

Regarding claim 55, Barahia discloses said first and second DC terminals are each configured to couple the rectifier module assembly to a high speed generator field winding.

Regarding claim 56, Barahia discloses said base comprises a metallic material.

Regarding claim 57, Barahia discloses of said first, second, and third conductive runs, and said conductive element, each comprise copper.

Regarding claim 58, Barahia discloses a rectifier circuit for rectifying a multi-phase AC signal generated in a plurality of exciter armature windings of a multi-pole high speed generator and providing a DC signal to a field winding of the generator, the rectifier circuit comprising: a plurality of parallel-connected rectification circuits each including an AC input terminal for receiving one phase of the multi-phase AC signal and first and second DC output terminals for providing the DC signal to the field winding, wherein each of said plurality of rectification circuits comprises: a first diode circuit having its anode electrically, coupled to said AC input terminal and its cathode electrically coupled to said first DC output terminal; a second diode circuit having its cathode electrically coupled to said AC input terminal and its anode electrically coupled to said second DC output terminal, and a resistive element electrically coupled between said first and second DC output terminals.

Regarding claim 59, Barahia discloses said first and second diode circuits each comprise a plurality of individual diodes electrically connected in parallel with one another.

Regarding claim 60, Barahia discloses the plurality of individual diodes comprises five individual diodes electrically connected in parallel with one another.

Regarding claim 61, Barahia discloses said resistive element comprises a thin-film resistive element.

Regarding claim 62, Barahia discloses each of said plurality of rectification circuits is formed on a substantially flat base dimensioned to mount axially within a hub onto which the plurality of exciter armatlire windings are mounted.

Regarding claim 63, Barahia discloses each of said plurality of rectification circuits is mounted within the hub, and spaced equidistant from a center of the hub and equidistant around a circumference thereof.

Regarding claim 64, Barahia discloses a modular rectifier circuit for rectifying one phase of a multi-phase AC signal generated in a plurality of exciter armature windings wound on an exciter hub of a multi-pole high speed generator, comprising: a substantially flat base having mounted thereon components that comprise the rectifier circuit, said base being dimensioned to removably mount within the exciter hub, and a plurality of terminals mechanically coupled to said base, each of said plurality of terminals being configured to receive a fastener.

Regarding claim 65, Barahia discloses said plurality of terminals includes an AC input terminal, and first and second DC output terminals.

Regarding claim 66, Barahia discloses said AC input terminal includes an open-ended slot for receiving a fastener therein.

Regarding claim 67, Barahia discloses said first and second DC output terminals each include openings for receiving a fastener therein.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.

Thanh Lam

Patent Examiner